Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0087998**
Facility Type	**Non-Municipal**	APS ID	**513122**
Major / Minor	**Minor**	Authorization ID	**1548745**

Applicant and Facility Information

Applicant Name	**Urban Acres MHP**	Facility Name	**Urban Acres MHP**
Applicant Address	35 Ridge Drive	Facility Address	2461 Elizabeth Avenue
	Fleetwood, PA 19522-9638		Temple, PA 19560-9715
Applicant Contact	Kevin & Ericka Ernst	Facility Contact	Kevin & Ericka Ernst
Applicant Phone	(610) 987-9610	Facility Phone	(610) 987-9610
Client ID	225664	Site ID	499618
Ch 94 Load Status	Not Overloaded	Municipality	Alsace Township
Connection Status	No Limitations	County	Berks
Date Application Received	November 10, 2025	EPA Waived?	Yes
Date Application Accepted	December 1, 2025	If No, Reason	

Purpose of Application: NPDES Permit Renewal.

Summary of Review

Urban Acres MHP (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on April 21, 2021, and became effective on May 1, 2021. The permit expires on April 30, 2026.

The design discharge flow from the facility is 0.015 MGD. The permit authorized discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Alsace Township, Berks County to Bernhart Creek.

WQM No. 0699405 was issued on 6/14/1999.

Sludge use and disposal description and location(s): Sludge is hauled off site by facility contractor.

Changes from the previous permit: The E. Coli. monitoring and report requirements will be added to the proposed permit. Total Lead 1/6 months monitor and report will be removed from the proposed permit.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	February 27, 2026
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	March 25, 2026

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.015
Latitude	40º 23' 15.97"	Longitude	-75º 53' 19.55"
Quad Name	Temple	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Bernhart Creek (WWF)	Stream Code	1978
NHD Com ID	26000262	RMI	3.45
Drainage Area	0.89 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS Gage 1471510
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Metals, Total Dissolved Solids (TDS)		
Source(s) of Impairment	Industrial Point Source Discharge,		
TMDL Status	Final	Name	Bernhart Creek
Nearest Downstream Public Water Supply Intake	Pottstown Borough Water and Sewer Authority		
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	56 miles	Distance from Outfall (mi)	Approximate 25.0 miles

Changes Since Last Permit Issuance:

Drainage Area

The discharge is to Bernhart Creek at RMI 3.37 miles. A drainage area upstream of the discharge is estimated to be 0.89 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow

The nearest USGS Streamgage is 01471510 in Schuylkill river at Reading, PA which is approximately 6.0 miles downstream of the discharge point hence is not representative. Moreover, stream flow data collected from USGS StreamStats indicated some parameters are outside of the recommended range for regression analysis to calculate low flows. The drainage area was found to be 888 mi^2 at the gage, Q_{7-10}, and Q_{30-10} values at this gage are 239.0 cfs, and 447.0 cfs. In absence of both Streamgage and StreamStats data, the calculations from previous fact sheet were used. Previous fact sheet indicated the low flow yield for the whole Bernhart Creek watershed is 0.270 cfs/mi^2. The drainage area at the Point of First Use (POFU) was found to be 0.05 mi^2. The default Q_{1-10}: Q_{7-10} and Q_{30-10}: Q_{7-10} are 0.64 and 1.36, respectively, per 391-2000-007.

$$\text{Yield} = 239.0 \text{ cfs}/888 \text{ mi}^2 = 0.27 \text{ cfs/mi}^2$$
$$Q_{7-10} = 0.27 \text{ cfs/mi}^2 * 0.89 \text{ mi}^2 = 0.24 \text{ cfs}$$
$$Q_{30-10} = 0.24 \text{ cfs} * 1.36 = 0.326 \text{ cfs}$$
$$Q_{1-10} = 0.24 \text{ cfs} * 0.64 = 0.154 \text{ cfs}$$

Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Pottstown Borough Water Authority (PWS ID #1460037) located approximately 25 miles downstream of the subject facility on the Schuylkill River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

Antidegradation Requirements (25 PA Code § 93.4):
The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams:
The discharge is currently located approximately 5,000 feet upstream of Bernhart Reservoir which is an attaining portion of Bernhart Creek (Latitude: 40°23'15.97" Longitude: -75°53'19.55"). The eMapPA shows that Bernhart Creek from approximately 4,500 feet upstream of Bernhart Reservoir to downstream of the reservoir is impaired for metals and TDS due to industrial point source (see Appendix for maps). The 2012 Pennsylvania Integrated Water Quality Report (formerly 303(d) list) also addresses the following impairment information for Bernhart Creek:

Bernhart Creek	*Source*	*Cause*	*Date Listed*	*TMDL Date*
Aquatic Life (7857)	*Industrial Point Source*	*Metals*	*1996*	*2007*
0.8 miles		*TDS*	*1996*	*2007*

The receiving waters is listed in the 2025 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters are an attaining stream that supports both aquatic life and recreational uses. The designated use has been classified as protected waters for warm water fishes (WWF) and migratory fishes (MF).

Total Maximum Daily Loads (TMDLs):
TMDLs for salinity/TDS/chlorides and metals have been approved for Bernhart Creek Watershed TMDL on April 7, 2007. Due to the cause of the impairments, industrial point sources are addressed in this TMDL. Lead is the primary pollutant in the stream and the TMDL specifically states that the Laureldale Borough MS4 and the Exide Battery lead smelting facility are the only point source discharges containing metals in the watershed (pg. 10 of TMDL). Also, this facility, according to the application, does not receive any industrial wastewater. Based on these facts, the Department reasonably believes that the pollutant of concern specified in the TMDL (i.e., lead) will not be present in the effluent and the discharge has no potential to cause or contribute to an instream excursion above water quality standards. Accordingly, no permit action is necessary for lead. The TMDL also states that since the water in the segment is currently meeting the water quality criterion for salinity/TDS/chlorides after the discharge from the Exide facility has been moved to the main stem of the Schuylkill River, no TMDL is necessary for salinity/TS/chlorides. See Appendix for the current TMDL status for Bernhart Creek.

Local TMDL:
The subject facility discharges into a segment of the Bernhart Creek. Further downstream of the discharge point, the downstream segment of Bernhart Creek is subject to a local TMDL named Bernhart Creek Watershed TMDL.

The TMDL was prepared for the Bernhart Creek Watershed in Berks County, a tributary to the Schuylkill River. The source of the impairments is listed as industrial point sources and the cause is listed as metals and salinity/TDS/chlorides. TMDL addresses lead, the primary pollutant in the stream.

Bernhart Creek watershed receives 6 permitted discharges including 3 domestic wastewater discharges and 3 industrial wastewater discharges. The 3 industrial discharges that discharge to the segment come from an Exide technologies facility, a Glidden Paint facility, and a Berks Products facility.

The Exide Technologies facility is downstream from the subject facility.

Due to location of the discharge upstream of the source of the impairment in the TMDL and the recent monitoring data, the facility shall not be required to monitor for lead, and it will be remove from the proposed permit.

Class A Wild Trout Streams:
No Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary				
Treatment Facility Name: Urban Acres MHP				
WQM Permit No.	**Issuance Date**			
699405	9/20/1999			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	Chlorine With Dechlorination	0.015
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.015	28	Not Overloaded	Dewatering	Other WWTP

Changes Since Last Permit Issuance:

Other Comments:
The WWTP train is as follows:

Comminutor (1) ⇒ Aeration Tanks (2) ⇒ Clarifier (1) ⇒ Chlorine Contact Tank (1) ⇒ Discharge

Biosolids:
The total sewage sludge/biosolids production within the facility for the previous year was 1.126 dry tons.

Compliance History	
Summary of DMRs:	DMRs reported in the last 12 months are summarized on the next page.
Summary of Inspections:	8/21/2023: Mr. Adam Aponte, WQS, conducted a compliance evaluation inspection. There were no violations noted during inspection. Sludge hauled quarterly by facility contractor. Recommendations were 1. Ensure all eDMR-related records are retained for at least three years, and all biosolids records are retained for at least five years. 2. Ensure all calibration buffers, verification standards, and reagents are within their expiration dates. 3. Continue documenting repair and maintenance information in the operator's daily journal for future reference. 4. All records must be made available upon request.
Other Comments:	There are no open violations associated with the permittee or the facility.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from January 1, 2025 to December 31, 2025)

Parameter	DEC-25	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25
Flow (MGD) Average Monthly	0.0041	0.0038	0.0038	0.0036	0.0037	0.004	0.004	0.0042	0.0041	0.0043	0.0042	0.0041
Flow (MGD) Daily Maximum	0.0055	0.0046	0.0047	0.0044	0.0042	0.0054	0.0047	0.005	0.0048	0.0051	0.0048	0.0043
pH (S.U.) Instantaneous Minimum	6.7	6.8	6.8	6.8	6.7	6.5	6.5	6.6	6.8	6.8	6.8	6.8
pH (S.U.) Instantaneous Maximum	7.0	7.1	7.1	7.0	7.2	7.0	7.1	7.1	7.0	7.1	7.2	7.0
DO (mg/L) Instantaneous Minimum	5.5	5.6	5.5	5.6	5.6	5.6	5.5	5.9	5.6	5.6	5.5	5.7
TRC (mg/L) Average Monthly	0.37	0.39	0.38	0.37	0.36	0.33	0.37	0.39	0.38	0.38	0.37	0.32
TRC (mg/L) Instantaneous Maximum	0.47	0.47	0.5	0.47	0.47	0.48	0.47	0.48	0.48	0.47	0.46	0.47
CBOD5 (mg/L) Average Monthly	< 2.3	2.8	< 2.2	< 2	< 2	< 2.5	3.3	< 2.9	12.9	3.7	3.8	< 2.0
CBOD5 (mg/L) Instantaneous Maximum	2.5	2.9	2.3	< 2	< 2	2.9	4.1	3.8	22.4	4.5	5.6	< 2.0
TSS (mg/L) Average Monthly	< 5.4	5.4	< 4	< 4	< 4.1	< 4	< 4	< 5	< 5	7	4.4	< 4.0
TSS (mg/L) Instantaneous Maximum	6.8	5.5	< 4	< 4	4.2	< 4	4	5	5	8.8	4.8	< 4.0
Total Dissolved Solids (mg/L) Average Quarterly	286			298			282			266		
Fecal Coliform (No./100 ml) Geometric Mean	13	3	< 1	< 2	< 1	< 1.0	6	< 2	< 2	< 1.0	7	2
Fecal Coliform (No./100 ml) Instantaneous Maximum	18	6	1	3	< 1	< 1.0	11	5	3	< 1.0	23	3

Ammonia (mg/L) Average Monthly	< 0.1	0.13	< 0.1	< 0.1	< 0.1	< 0.13	< 0.1	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (mg/L) Instantaneous Maximum	< 0.1	0.16	< 0.1	< 0.1	< 0.1	0.16	< 0.1	0.11	< 0.1	< 0.1	< 0.1	< 0.1
Total Lead (mg/L) Semi-Annual Average	< 0.001						< 0.001					

Existing Effluent Limitations and Monitoring Requirements

Outfall 001,

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	20	XXX	40	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	9.5	XXX	19	2/month	8-Hr Composite
Total Lead	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	Grab

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	20.0	XXX	40.0	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	9.5	XXX	19.0	2/month	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.015
Latitude 40° 23' 15.97" **Longitude** -75° 53' 19.55"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

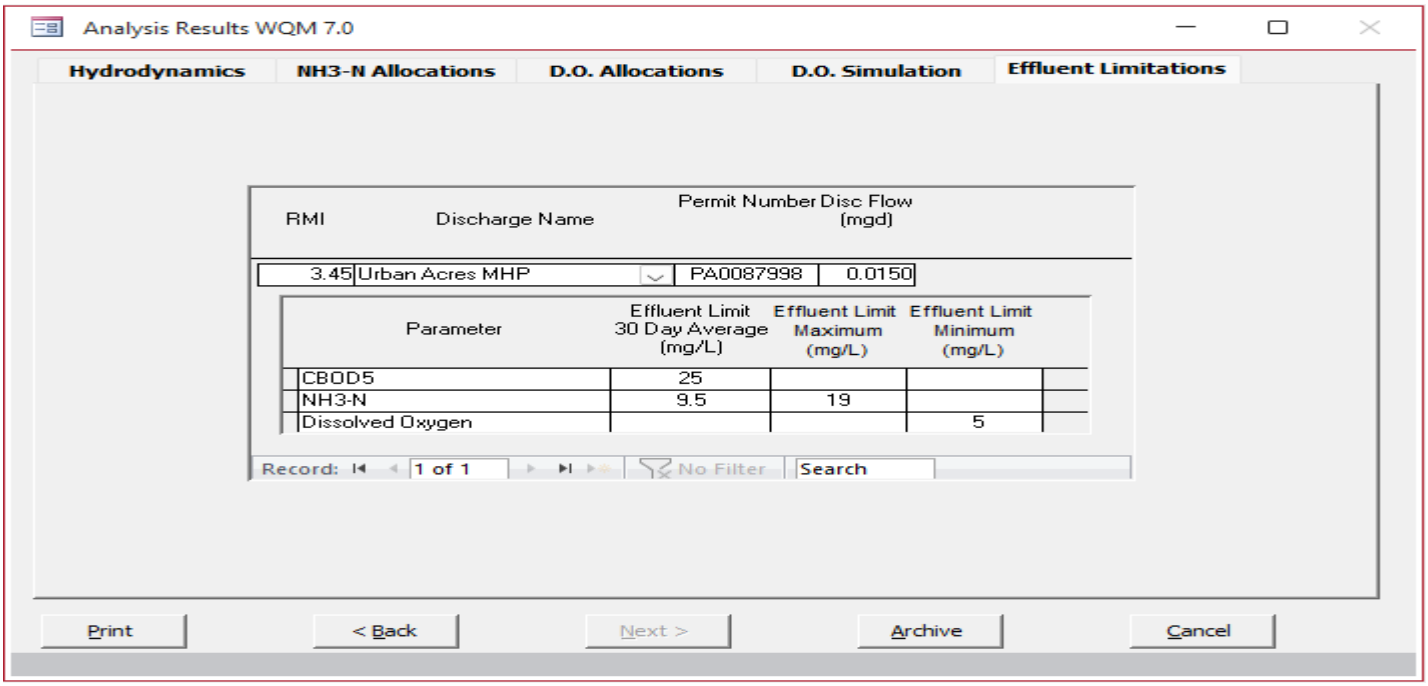
The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments:

Water Quality-Based Limitations

The following limitations were determined through water quality modeling WQM 7.0 as screen print below.



TRC_CALC spreadsheet was utilized to determine if a water quality-based effluent limitation (WQBEL) for total residual chlorine (TRC) is necessary. Using a new default value of zero (0) for chlorine demand of discharge, the spreadsheet recommends no WQBEL for TRC for this renewal.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.24	= Q stream (cfs)	0.5	= CV Daily
0.015	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 3.318	1.3.2.iii	WLA cfc = 3.228
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.236	5.1d	LTA_cfc = 1.876

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

However, the model also recommended that the existing WQBEL for NH3-N was still protective of water quality. DEP determined that the previous water quality model was properly completed and there has not been any modification to the facility. Since the background water quality of receiving stream has not been changed, no additional modeling is necessary. The table below summarizes the previous modeling effort.

Parameter	Discharge Concentration (mg/L)	Effluent Limitations (mg/L)		
		30-day Average	Maximum	Minimum
$CBOD_5$	25	12.9	22.4	
NH_3-N (5/1 – 9/30)	20/40	0.13	0.16	
NH_3-N (10/1 - 4/30)	9.5/19	< 0.13	0.16	
Dissolved Oxygen	5.0			5.5

Summary

a. Flow
Flow monitoring remains unchanged and is recommended by the permit guidance, *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (362-0400-001)*.

b. pH
pH limits remain unchanged and are required by 40 CFR §133.102. The existing monitoring requirement remains unchanged and is recommended by Table 6-3 of the permit guidance.

c. Dissolved Oxygen (D.O.)
The existing D.O. limit remains unchanged and is required by 25 PA Code § 93.7. The existing monitoring requirement also remains unchanged and is recommended by Table 6-3 of the permit guidance.

d. Total Residual Chlorine
Since no WQBEL for TRC was recommended by the spreadsheet, the existing BAT limit of 0.5 mg/L will remain in the permit. The existing monitoring requirement remains unchanged and is recommended by Table 6-3 of the permit guidance.

e. Total Suspended Solids / $CBOD_5$
Since no WQBEL is recommended for $CBOD_5$, and TSS limits remain unchanged and are required by 25 PA Code § 92a.47(a)(1). The existing monitoring requirements for both parameters will also remain in the proposed permit.

f. NH_3-N
As recommended by WQM 7.0, the existing WQBEL for NH_3-N will remain in the permit. According to the Department's Implementation Guidance of Section 93.7 Ammonia Criteria (391-2000-013), the winter effluent limit must be set three-times the summer limit (i.e., 9.5 mg/L x 3 = 28.5 mg/L). However, since this approach will exceed the existing Delaware River Basin Commission (DRBC)'s ammonia criteria (20 mg/L), the winter effluent limit will remain as 20 mg/L. The existing monitoring requirements will also remain in the proposed permit.

g. Fecal Coliform
The existing fecal coliform limits will remain in the permit and are consistent with 25 PA Code § 92a.47(a)(4) and (5). The existing monitoring requirements will remain in the permit.

h. E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/year will be included in the permit to be consistent with the recommendation from this SOP.

i. Total Dissolved Solids (TDS)
Per Article 3.10.4.D.2 of DRBC's Water Quality Regulations, TDS shall not exceed 1000 mg/L. An email dated June 12, 2013 by Steve Walsh of DRBC's Water Resources Engineer indicated that if there is no TDS data available to determine if the permit needs to have TDS limits, quarterly monitoring requirement in the permit is recommended. Therefore, the quarterly monitoring requirements in existing permit for TDS per 18 CFR § 410 (DRBC Water Quality Regulations) will remain in the proposed permit.

j. Lead, Total
Due to TMDL, the facility shall not be required to monitor lead, and it will remove from the proposed permit.

Anti-Degradation Requirement
The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.I.1 and 40 CFR 122.I.2). The facility has proposed effluent limitations that are as stringent as the existing permit.

WQM 7.0 Data:

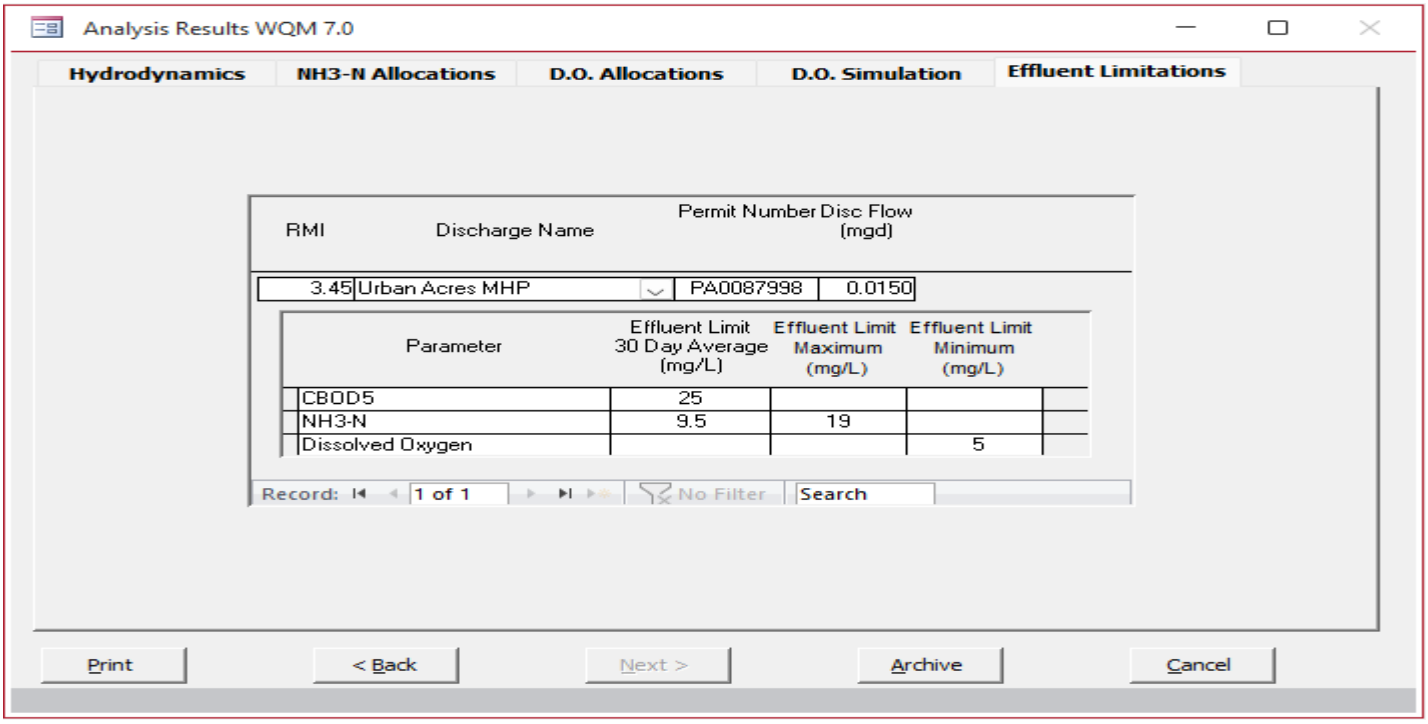
*	Discharge pH	7.0	(Default per 391-2000-007)
*	Discharge Temperature	25°C	(Default per 391-2000-007)
*	Stream pH	7.0	(Default per 391-2000-006)
*	Stream Temperature	25°C	(Default for WWF per 391-2000-003)
*	Background NH_3-N	0 mg/L	(Assumed since no upstream WWTPs)

Node 1: Urban Acres MHP Outfall 001 to Bernhart Creek (Stream Code 01978)

Elevation:	529 ft (USGS National Map Viewer)
Drainage Area:	0.89 mi^2 (USGS PA StreamStats)
River Mile Index:	3.45 (PA DEP eMapPA)
Low Flow Yield:	0.27 cfs/mi^2
Discharge Flow:	0.015 MGD (NPDES permit)

Node 2: Just before confluence of Bernhart Creek with Trib 01979

Elevation:	490.26 ft (USGS National Map Viewer)
Drainage Area:	1.79 mi^2 (USGS PA StreamStats)
River Mile Index:	3.295 (PA DEP eMapPA)
Low Flow Yield:	0.27 cfs/mi^2
Discharge Flow:	0.000 MGD



rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin: 02C | Stream Code: 1978 | Stream Name: BERNHART CREEK

RMI	Name	Permit Number	Disc. Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
3.450	Urban Acres MHP	PA0087998	0.015	CBOD5	25		
				NH3-N	9.5	19	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin: 02C | Stream Code: 1978 | Stream Name: BERNHART CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
3.450	Urban Acres MH	11.07	19	11.07	19	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
3.450	Urban Acres MH	1.37	9.5	1.37	9.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5 Baseline (mg/L)	CBOD5 Multiple (mg/L)	NH3-N Baseline (mg/L)	NH3-N Multiple (mg/L)	Dissolved Oxygen Baseline (mg/L)	Dissolved Oxygen Multiple (mg/L)	Critical Reach	Percent Reduction
3.45	Urban Acres MHP	25	25	9.5	9.5	5	5	0	0

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rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin: 02C | Stream Code: 1978 | Stream Name: BERNHART CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.450	0.015	25.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
4.899	0.437	11.213	0.123
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
4.00	0.792	0.94	1.029
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.957	27.772	Owens	5
Reach Travel Time (days)			
0.077			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.008	3.99	0.93	7.50
0.015	3.99	0.92	7.50
0.023	3.98	0.92	7.50
0.031	3.98	0.91	7.50
0.038	3.97	0.90	7.50
0.046	3.97	0.90	7.50
0.054	3.97	0.79	7.50
0.062	3.76	0.79	7.50
0.069	3.76	0.78	7.50
0.077	3.75	0.77	7.50

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin: 03C Stream Code: 1978 Stream Name: BERNHART CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
3.450	0.24	0.00	0.24	.0232	0.00754	.437	4.9	11.21	0.12	0.077	25.00	7.00
Q1-10 Flow												
3.450	0.15	0.00	0.15	.0232	0.00754	NA	NA	NA	0.10	0.096	25.00	7.00
Q30-10 Flow												
3.450	0.33	0.00	0.33	.0232	0.00754	NA	NA	NA	0.14	0.066	25.00	7.00

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03C	1978	BERNHART CREEK	3.450	529.00	0.69	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.270	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Urban Acres MHP	PA0087998	0.0150	0.0150	0.0150	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	9.50	0.00	0.00	0.70

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03C	1978	BERNHART CREEK	3.295	490.26	179.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.270	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Urban Acres MHP	PA0087998	0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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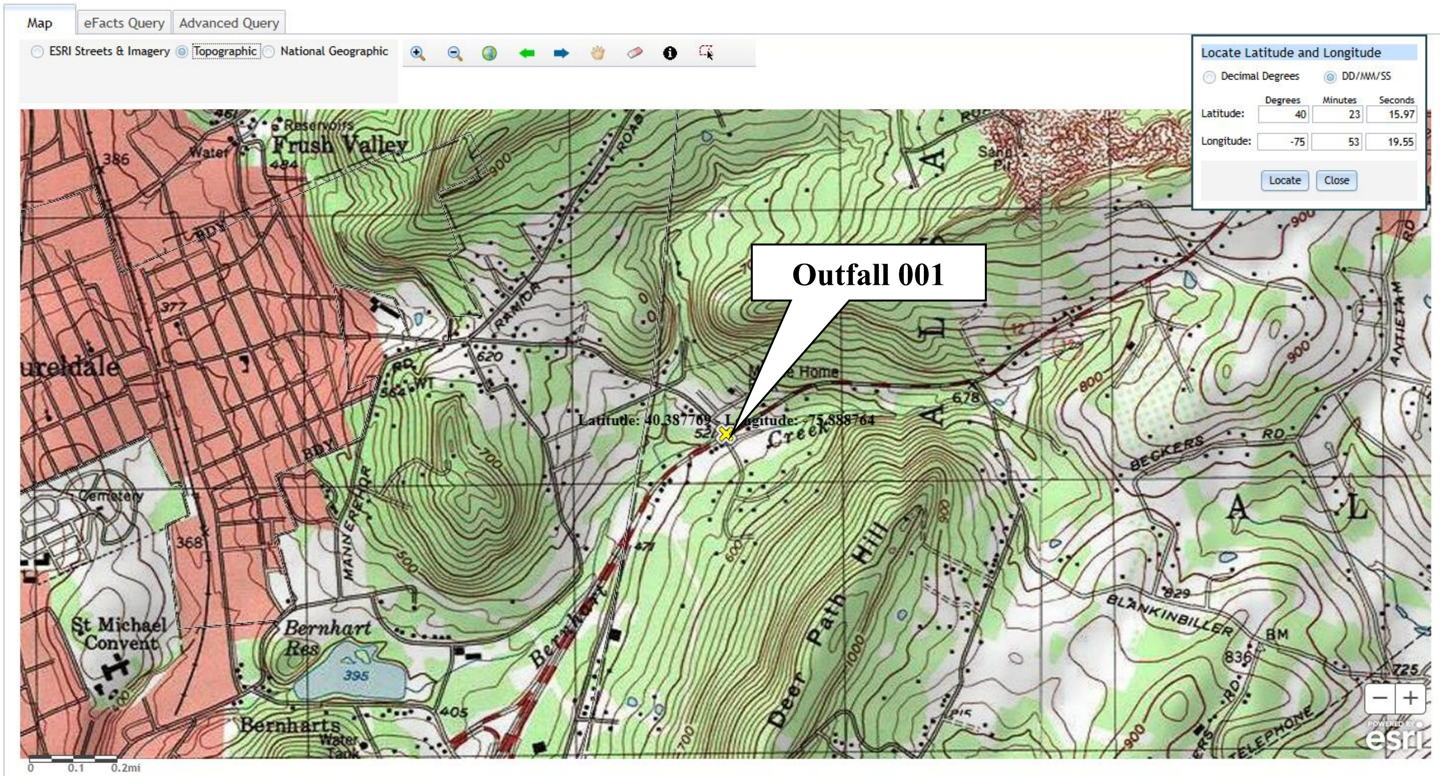
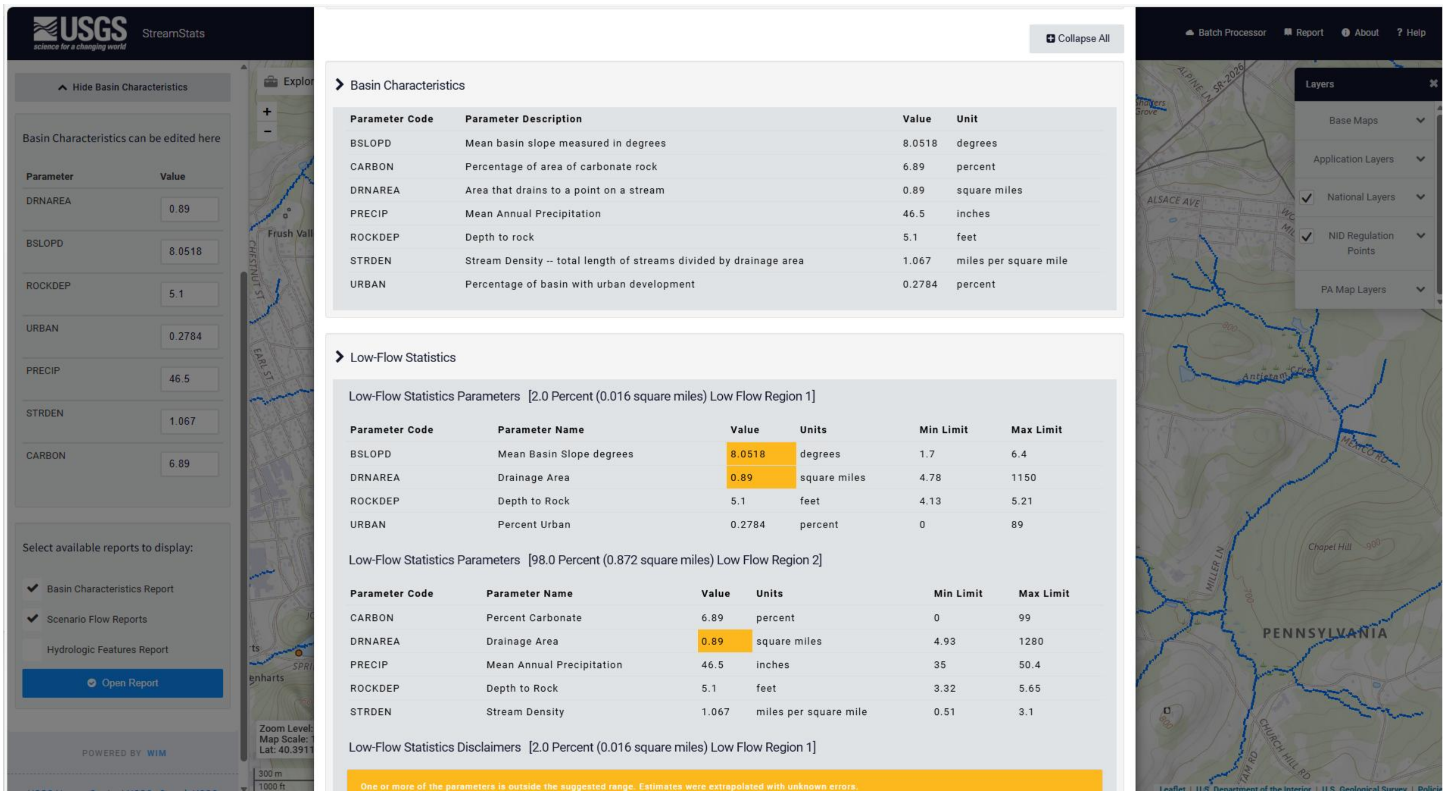




Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.0518	degrees
CARBON	Percentage of area of carbonate rock	6.89	percent
DRNAREA	Area that drains to a point on a stream	0.89	square miles
PRECIP	Mean Annual Precipitation	46.5	inches
ROCKDEP	Depth to rock	5.1	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.067	miles per square mile
URBAN	Percentage of basin with urban development	0.2784	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [2.0 Percent (0.016 square miles) Low Flow Region 1]

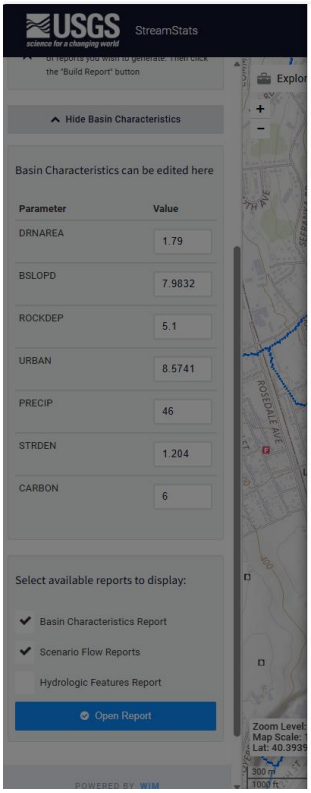
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	8.0518	degrees	1.7	6.4
DRNAREA	Drainage Area	0.89	square miles	4.78	1150
ROCKDEP	Depth to Rock	5.1	feet	4.13	5.21
URBAN	Percent Urban	0.2784	percent	0	89

Low-Flow Statistics Parameters [98.0 Percent (0.872 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	6.89	percent	0	99
DRNAREA	Drainage Area	0.89	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46.5	inches	35	50.4
ROCKDEP	Depth to Rock	5.1	feet	3.32	5.65
STRDEN	Stream Density	1.067	miles per square mile	0.51	3.1

Low-Flow Statistics Disclaimers [2.0 Percent (0.016 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.9832	degrees
CARBON	Percentage of area of carbonate rock	6	percent
DRNAREA	Area that drains to a point on a stream	1.79	square miles
PRECIP	Mean Annual Precipitation	46	inches
ROCKDEP	Depth to rock	5.1	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.204	miles per square mile
URBAN	Percentage of basin with urban development	8.5741	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [1.0 Percent (0.016 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	7.9832	degrees	1.7	6.4
DRNAREA	Drainage Area	1.79	square miles	4.78	1150
ROCKDEP	Depth to Rock	5.1	feet	4.13	5.21
URBAN	Percent Urban	8.5741	percent	0	89

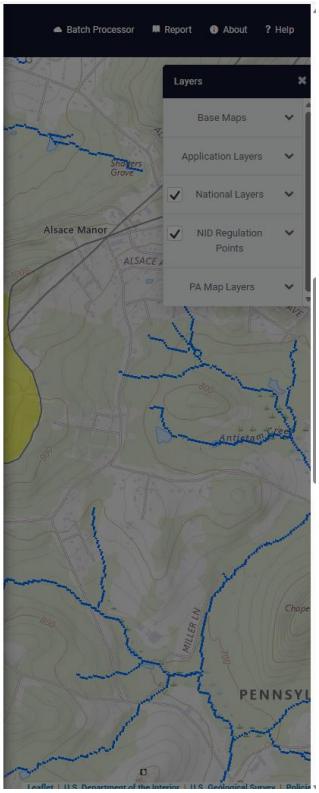
Low-Flow Statistics Parameters [99.0 Percent (1.77 square miles) Low Flow Region 2]

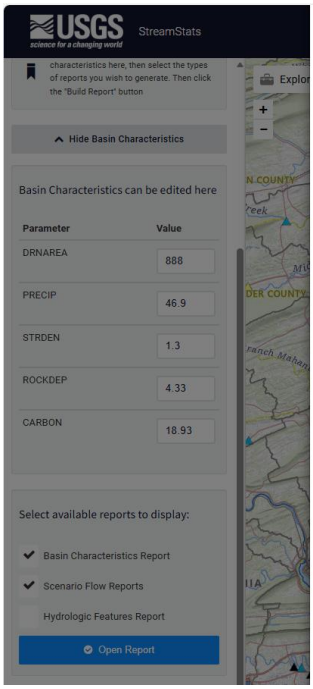
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	6	percent	0	99
DRNAREA	Drainage Area	1.79	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46	inches	35	50.4
ROCKDEP	Depth to Rock	5.1	feet	3.32	5.65
STRDEN	Stream Density	1.204	miles per square mile	0.51	3.1

Low-Flow Statistics Disclaimers [1.0 Percent (0.016 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [1.0 Percent (0.016 square miles) Low Flow Region 1]





Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	18.93	percent
DRNAREA	Area that drains to a point on a stream	888	square miles
PRECIP	Mean Annual Precipitation	46.9	inches
ROCKDEP	Depth to rock	4.33	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.3	miles per square mile

Low-Flow Statistics

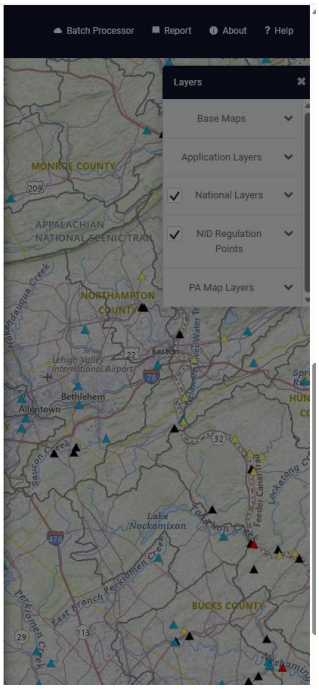
Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	18.93	percent	0	99
DRNAREA	Drainage Area	888	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	46.9	inches	35	50.4
ROCKDEP	Depth to Rock	4.33	feet	3.32	5.65
STRDEN	Stream Density	1.3	miles per square mile	0.51	3.1

Low-Flow Statistics Flow Report [Low Flow Region 2]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	379	ft^3/s	38	38
30 Day 2 Year Low Flow	447	ft^3/s	33	33
7 Day 10 Year Low Flow	239	ft^3/s	51	51
30 Day 10 Year Low Flow	285	ft^3/s	46	46
90 Day 10 Year Low Flow	352	ft^3/s	36	36



Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other: